Trip Report Kyiv, Ukraine March 25-31, 1999

Herman E. Mitchell, Ph.D. Rho. Inc. Chapel Hill, N.C.

This is a report of the March 25-31, 1999 trip to Kyiv, Ukraine by Herman E. Mitchell, Ph.D., consultant to the project. During the course of this visit, Drs. Masnyk, Howe, and Bouville were present through Saturday March 27th, and Professor Burch was present through Wednesday April 31st. Meetings during the first two days usually included both Dr. Howe and Professor Burch. The remaining meetings often included Professor Burch. Therefore, it is expected that a number of issues and meetings referred to in this report will also be documented elsewhere. Although I have not seen the other trip reports, I will try to confine my report to those topics I expect are not addressed elsewhere.

March 26th meeting with Dr. Derevianko (epidemiologist), Mr. Kostin (DCC Chief), Dr. Howe and Professor Burch:

During this meeting we first quickly reviewed the status of the DCC operation with regard to equipment and software and then the status of study forms programming and data collection.

Hardware: The DCC equipment is now fully operational. They have a local network server with 6 attached workstations (5 in the 5th floor DCC office used by programmers, data entry and epidemiology) and 1 workstation in the 4th floor project administrative office. The small network hub that I brought over with me on the last trip solved the problems they were experiencing in setting up the network Minolta printer. All workstations on the network can now share this device. Dr. Bogdonova has an older, NCI-donated workstation in her lab which is not linked to the network due to the need for a 10-Mbit network connector board. (A later section of this report deals more specifically with the DCC's minor, additional hardware needs.)

Software: The DCC is in the process of converting all data bases to a Interbase platform. At present many of their existing programs are written in Paradox and are generally compatible with this software platform, but most new development will made in a more compatible and flexible Structured Query Language format. Some older Paradox programs may need to be converted eventually. Mr. Kostin seemed quite happy with the software systems with the minor exception of a few hardware limitations (mainly computer memory) that constrain their use of certain workstations to certain functions.

We reviewed the process of data collection from initial cohort selection, invitation scheduling, examinations and interviews. This information is, no doubt provided in Professor Burch and Dr. Howe's report. I will focus on data entry and programming progress. At the time of our meeting, Mr. Kostin and his programmer had completed programming for 5 study forms, namely, the Locator; Ultrasonography; Initial Registration; Blood Collection and Laboratory forms. Additionally, programming had been completed for the "Dynamic of Invitation Form" which was designed by Dr. Derevianko to by completed by the local medical personnel in order to generate a report of recruitment status.

Of those forms programmed for data entry the data entry status by form, is as follows:

Dynamic of Invitation Form	941
Locator Form	2085
Ultrasonography Form	0
Initial Registration Form	100
Blood Collection Form	0
Laboratory Form	0

At present (March 26, 1999), they had screened 2698 participants. Mr Kostin hoped to have all screening forms programmed for entry in one more month (although this seemed a bit ambitious).

Data Security: Data forms had been placed in piles on the tables adjoining the DCC and should be filed away in participant numbered file folder and cabinets. Electronic backups of the study databases are being performed regularly but copies or not being stored off-site to protect against disaster. We recommended that Mr. Kostin take a copy of the data tapes home at night until a secure off-site, fire proof storage can be arranged. It was pointed out that we frequently use Bank safety deposits boxes for disaster recovery storage in the U.S. and we were told they would look in to that possibility.

Meetings with Tereshchenko: Several meetings were held with Drs. Tereshchenko and Derevianko, primarily to discuss issues related to cohort identification and recruitment and protocol modifications. Since I occasionally missed part of these meetings to hold further discussions with Mr. Kostin regarding programming and data management issues I am certain they will be better documented in the reports of my colleagues. These meetings were attended by Dr. Howe and professor Burch and are documented in their trip reports. I will review those reports for any additional comments I may have.

Meetings with Mr. Kostin: throughout the trip I number of meetings of varying length were held

with Mr. Kostin. Usually, these meetings were one-on-one, but occasionally included Professor Howe and Dr. Derevianko. The meetings with Mr. Kostin focused on 3 major topics; I) DCC operations; II) data management issues regarding data quality; and III) reporting formats for project status reports. The full group engaged in discussions of this later topic with Professor Howe guiding the discussions and clarifying reporting requirements and needed modifications. Additional comments regarding the our recommendations for project reports will be found in Professor Howe's trip report.

I. DCC Operations:

Mr. Kostin and I discussed issues of DCC operations including equipment status, maintenance, and usage; and personnel responsibilities and needs.

A). Equipment:

The DCC is now well established Mr. Kostin has done an excellent job of setting the DCC local area network, installing all software systems and managing the workflow. Dr. Mincey, it should be noted, was very helpful in assisting Mr. Kostin in identifying and resolving equipment problems with Computerland Kyiv as well as providing advise about personnel and DCC setup.

1). Computer workstation memory:

Due to increasing software requirements and the never ending complication with ordering computer equipment, the DCC equipment configurations need a bit of adjustment. Basically, Computerland Kyiv was not able to provide the exact models that we (and they) had configured during earlier visits. The models were upgraded, but in order to keep the prices the same they reduced the amount of memory in the computers. This creates some limitations for certain systems in that they run slowly or can not run the full data management system software. At present of the 5 standard workstations attached to the network, 2 have only 16MB of RAM memory and 3 have 32 MB. The main programming system, which includes the image analysis functions and optical drives contains only 32 Mb of memory. All these system could be easily and inexpensively upgraded to 64 MB. The cost will be between \$60 to \$90 per machine and will greatly increase their speed and functionality. This memory should be order in the US and carried over to Kyiv. It is simple to obtain and install. I have all equipment part numbers and specifications necessary for this order.

2). Expanding the DCC laptop for network use.

The DCC has a laptop computer which could be used as an additional workstation if a network card is purchased. When both programmers and all 3 data entry people are working, the epidemiologists must wait for available equipment to run their reports. The DCC office has an available network connection, but the laptop needs the internal board which permits the link to the network. This board is approximately \$150; is quite small and again, should be purchased

here and taken to Kyiv.

3). Dr. Bogdonova's workstation.

As mentioned earlier, Dr. Bogdonova has a older workstation which can not be connected to the network since it also does not have a network board for connection. A network card for this machine would be less than \$100.

B). Maintenance:

The DCC copier is in need of a drum replacement which is an expensive maintenance cost. One approach is to establish a maintenance contract for the copier and Mr. Kostin was asked to obtain a quote for this maintenance contract. This contract was obtained by Mr. Kostin and given to Dr. Masnyk for his consideration.

C). Personnel needs:

Mr. Kostin expressed the difficulty he has had in his new position as head of the DCC. He is concerned that his programming time has been greatly reduced due to his added project responsibilities. Primarily these added tasks include answering a myriad of questions on everything from the ultrasonography devices and their Camtronics imagine data collection, to preparing files and special reports for the epidemiologists and mobile teams. He fears that the programming efforts will fall behind without additional help. He requested an additional programmer for a 3 to 6 month period to get the project up and running.

II. Data Quality Issues:

This topic was the major item of discussion with Mr. Kostin. Basically, I spent several hours with Mr. Kostin and his other programmer discussing appropriate data edit procedures and reports. Many different topics were discussed and most of them were not familiar to Mr. Kostin and will require reinforcement and review on subsequent visits. In this report I will attempt to give the flavor of these conversations. For example, at present all of Mr. Kostin's data entry programs block errors from entry. The computer will not accept invalid data and brings the data entry process to a halt. I explained at length with many examples from real study forms the problems with this approach. I explained the value of permitting errors to enter the system and then generating edit reports which document corrections to study data. Also, I provided examples of how these error reports can be summarized to show potential weaknesses in training, confusion in the protocol, or lack of understanding of a particular interviewer or clinician. I also pointed out the inefficiency of stopping data entry operators who must track down error corrections, only to return to the form entry later and discover yet another error 3 questions later. The notion of letting errors into the system and then batch editing data is not a familiar concept and caused some considerable confusion at first. By the end of the visit, upon repeated examples

from real study data and forms, the idea was becoming more attractive. However, this will require some major changes in programming approaches.

Other topics covered included identification of missing data, validation specifications, error trapping, database design for holding "unclean" data forms, and database updating in batch mode for cleaned records. As mentioned above these topics need more explanation and I think Mr. Kostin would greatly benefit from a visit to the US to observe data management in this country.

III. Project Status Reports:

Professor Howe, Dr. Derevianko, Mr. Kostin and I spent considerable time reviewing current project status reports and suggesting modifications and new reports which might aid all of us in understanding the current status of the project. As these reports were discussed, I sat a computer and programmed the necessary tables in Excel format. In this manner, we were able to leave behind working copies of Excel spreadsheet which included the necessary formulas for calculating totals, etc. In these reports, sample numbers were inserted to "test" the programmed formulae. Five separate reports were designed. An effort was made to follow a common logic for each report so that the reader and those generating the report would not be confused. For each report there are two versions attached the spreadsheet format with sample (made up) data and an annotated version which provide definitions for each column of each report. For example, Table #1 "Identification of Current Address of 1986 Cohort" is shown below;

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The most confusing part of the project reports that we have received from our Ukrainian and Belarusian colleagues has been the constantly changing denominators. We have attempted to keep the percentages always based upon the left most data column (or the second data column, if necessary). This format approach allows one to read these reports without always struggling with the determination of numerators and denominators. These are draft reports and are submitted for comments from all of our project members. I have the electronic versions and can make modifications as needed.

The five reports (tables) we designed are:

Table #1. Identification of the Current Address of 1986 Cohort

Table #2. Status of Cohort with Identified Current Addresses

Table #3. Status of Recruitment and Screening Activity

Table #4. Details of Accepted Invitations

Table #5. Reasons for Refusals

All the annotated tables are attached in Appendix A. I believe it would be worthwhile for our group to make these report formats a major discussion item for an up-coming meeting in Washington.

In order for Mr. Kostin and Dr. Derevianko to become familiar with these formats we worked with them to filled in as much data as they could during the visit. Those tables are provided in Appendix B. The numbers in these tables were generated rather quickly and, in some cases, estimated. One should not rely to heavily on their accuracy, Our Ukrainian colleagues need time to program queries to pull these data more accurately from their databases. Mr. Kostin and I discussed the value of establishing standard query programs for this purpose. Given that amount of work that will require, we should make any changes as quickly as possible so as not to make them reprogram.

Summary:

I was quite favorably impressed with the improvements that I saw in Kyiv. Mr. Kostin has clearly been hard at work. He has filled his new position as DCC head in manner better than I had hoped. His grasp of the project has improved tremendously and his expertise in both the hardware and software demands of the project were clearly evident. The small group method of visiting was most productive. Although I missed being with the full American team, the opportunity to have long, uninterrupted periods of time to thoroughly review issues and problems was most rewarding and fruitful. A combination of these small-team trips with the larger

meetings seems to me, to be ideal. While the small groups provide a productive setting, the project must be fully integrated and will require discussions with all the players present on occasion.

Appendix A

Annotated Table Formats for Project Reports

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Appendix B

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